Issue 10 - August 2009

Wombat Forestcare Newsletter

I'm very pleased to say here is the 10th issue of our newsletter. Our first issue was published nearly three years ago and we've certainly had some terrific contributors over those years so thank you one and all for helping to make this possible. It also means Wombat Forestcare is three years old (and going strong) and yes, it's AGM time again so please come along, participate and help make it a great event. This is also a great time to remind everyone about Wombat Forestcare's dedication to protecting and enhancing the natural ecosystems of the Wombat Forest and surrounding areas... Tibor Hegedis *(editor)*

Wombat Forest Rare Plants Project

By Murray Ralph

Wombat Forestcare has a new project based around rare and threatened plant species. The project involves locating sites in the Wombat State Forest where selected rare plants have been previously recorded, then assessing those sites in relation to current population size, threats and management issues (e.g. weed invasion). If appropriate, seed or propagation material could be collected from the plants to enable enhancement plantings to be undertaken.

Four rare species have been selected: Swamp Bush-pea *(Pultenaea weindorferi)*, Dense Mint Bush *(Prostanthera decussata)*, Satinwood *(Nematolepsis squamea)* and Wombat Bossiaea *(Bossiaea sp. Aff. bracteosa)*.

Nematolepis squamea subsp. squamea
(photo © M.Fagg, Australian National Botanic Gardens)

By concentrating on rare species, the project will be a strategic way to contribute to the conservation of biodiversity in the Wombat Forest. As an added bonus we will be getting out into different parts of the forest on a regular basis.

The Flora and Fauna section at DSE are very supportive of the project, and have provided us with laminated pictures and records of sightings.

DSE's concern for locating rare plants has increased since the only known population of the endangered shrub, Shiny Nematolepis *(Nematolepis wilsonii)* was decimated by the fire at Marysville earlier this year (luckily a botanist had taken cuttings the year before and plants have been propagated). As Wombat Bossiaea is also only known at one location in Australia and it has not been seen for many years, it is of particular interest to DSE.

The details of sightings of Wombat Bossiaea read like a detective novel. The plant was first seen in the Wombat Forest in 1982 by the renowned amateur botanist, Cliff Beauglehole.

In 1995 botanists from the National Herbarium of Victoria spent a day searching for the species but were unable to locate the specimen. However, luckily, as they were driving out of the forest they spotted a specimen in full flower on the side of a forest track. Later it was identified as a completely new species which only occurred in the Wombat Forest.

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Several attempts were made to collect seed, but the plants failed to set fruit.

Since then the plant has not been sighted, so both DSE and Wombat Forestcare are very keen to find it and possibly other populations. Although the herbarium records cannot be obtained, a number of clues as to the location of the plant are provided in a paper prepared by the herbarium botanists. Based on these clues we will begin our search.

Another rare species listed for the Wombat Forest is Satinwood *(Nematololepis squamea subsp squamea).*

Bossiaea bracteosa (photo © M.Fagg, Australian National Botanic Gardens)

Two of these plants were identified in 1994 near Barkstead. We had previously attempted to find these but uncertain of the exact location our efforts failed. With the additional data to hand their location may be revealed.

In Spring we will run a number of days for Wombat Forestcare members who will be armed with photographs and detailed descriptions to assist with the search for some of these rare and lesser known plants of the Wombat Forest. ■

Climate Change And The Wombat State Forest: A Greenhouse Refuge?

By Tanya Loos

There has been an average of a 0.6 C° rise in temperature globally in the past one hundred years, and there is an absolutely vast body of evidence out there recording the changes in habitats of flora and fauna as a result of Climate Change. Of course, this temperature rise has been accompanied by changes in precipitation (more rain in parts of the world such as Europe and less rain in places such as our part of Australia), changes in large scale meteorological phenomena such as El Nino, the North Atlantic Oscillation and in sea level rise. All of these factors, plus the pressures of continuing habitat destruction, hunting and competition with the several billion humans, are having profound effects on global biodiversity, and even commonly seen birds and animals are declining in areas such as Europe.

Here in Australia, we are seeing changes in range, as formerly northern area birds extend their ranges southward. For example, White-headed pigeons are now observed west of Melbourne. Unfortunately these extensions in range are accompanied by a reduction in the northern part of their range. Climate Change in Australia is likely to mean a continuation of what we have already seen in the past few years, including increased drought and decline in winter rainfall, unpredictable weather

Where to? Eastern yellow robin *(photo by Graeme Chapman)*

such as severe storms and wind and less frosty days. In Australia there has been an increase of land surface temperature of 0.9 C°.

A recent report by Birds Australia "Birds In A Changing Climate 2007" identified the following habitats as at special risk from the effects of climate change: freshwater and wetland habitats, sub-tropical and tropical rainforests, alpine areas, woodlands, the drier, flatter areas of the continent, mallee, and coastal habitats such as saltmarshes and near coastal low lying dunes and plains.

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Whew! What does that leave us with? Mid elevation or foothill forests! A study in 1995 identified a number of areas in Victoria that will probably fare better under the effects of climate change, and called these areas "greenhouse refugia". One of these areas was in fact the Wombat Forest! Other areas are in the Otways, and Gippsland.

So what are the implications of the Wombat State Forest and its associated parks being a greenhouse refuge? Perhaps the struggling woodland birds of the plains will manage to shift their ranges and survive in the Wombat. Certainly, even now, birds that are common here such as the Rufous and Golden Whistlers, Scarlet Robin, and Buff-rumped Thornbill are not faring so well in woodland areas.

If the Wombat is regarded as a greenhouse refuge, it means that on a statewide scale, this area is actually very very important ecologically, and should be managed as such. It needs one governing body, such as Parks Victoria, and its moister and riparian areas such as Damp Forest and Sedgy Riparian Woodland EVC's should be managed sensitively as a matter of priority.

If anyone would like the references associated with this article, or to read my assignment "Climate Change and Birds of the Southeastern Foothill Forests" for further information, let me know! pollen@netconnect.com.au ■

Ecological Vegetation Classes Of The Wombat Forest

By Murray Ralph

Depending on environmental conditions, particular plant species and groups of plants will tend to grow together. These distinct native vegetation types are called Ecological Vegetation Classes (EVCs). Within the Wombat Forest approximately 30 different EVCs have been mapped.

Midlands Heathy Woodland (EVC 48-13)

In the Wombat Forest, Heathy Woodland occurs on the top of dry ridges in the higher rainfall areas (900-1100mm), at altitudes of 600-830m above sea level. Soils are very fine white clay that are nutrient poor. The overstorey is dominated by Broad-leaf Peppermint *(Eucalyptus dives)*, which grows in a woodland form. Other Eucalypts that may also be present include Messmate *(Eucalyptus obliqua)* and Narrow-leaf Peppermint *(Eucalyptus radiata)*. Understorey trees are usually lacking. A dense shrub layer of 'heathy'-type species usually dominates the understorey. These shrubs tend to have leaves that are narrow, small, stiff and/or have sharp tips (ericoid is the botanical term for these types of leaves).

Common medium-sized shrubs include Dagger Wattle *(Acacia oxycedrus)*, Bushy Hakea *(Hakea decurrens)*, Prickly Tea-tree *(Leptospermum continentale)* and the low form of Silver Banksia *(Banksia marginata)*.

Small shrubs include Rosy Baeckea *(Baeckea ramosissima)*, Common Beard-heath *(Leucopogon virgatus)*, Wombat Bush-pea *(Pultenaea reflexifolia)*, Showy Parrot-pea *(Dillwynia sericea)* and Bundled Guinea-flower *(Hibbertia prostrata)*. The climber Slender Dodder-laurel *(Cassytha glabella)* can be found growing intertwined with these shrubs.

Groundflora species include Common Hovea *(Hovea heterophylla)*, Common Raspwort *(Gonocarpus tetragynus)*, Tall Sundew *(Drosera peltata ssp. auriculata)* and Hairy Pennywort *(Hydocotyle hirta)*.

Common grasses, rushes and sedges include Forest Wire-grass *(Tetrarrhena juncea)*, Grey Tussock-grass *(Poa sieberiana)*, Spiny-headed Mat-rush *(Lomandra longifolia)*, Common Rapier-sedge *(Lepidosperma filiforme)* and Curly-wig *(Caustis flexuosa)*. Lichen and mosses are also common. The fern Austral Braken *(Pteridium esculentum)* is also present and may dominate on sites that have experienced frequent fire.

Heathy Woodland *(photo by Murray Ralph)*

All EVC are assigned a conservation significance based on the extent to which they have been cleared from their former range. Heathy Woodland is classified as being depleted. The main current threats to this EVC in the Wombat State Forest include climate change, fuel reduction burning, firewood collection, loss of ground logs and pest animals. ■

Life In The Litter

By Alison Pouliot

Leaf Litter - one of the planet's most diverse habitats.
(photo by Alison Pouliot)

While walking in the Wombat with a friend recently, I made reference to the absence of litter following the recent fires. I noticed she was peering into the forest with a perplexed expression on her face.

I then realised that she was looking for the 'litter' I'd mentioned, thinking that literally I was referring to rubbish, to human refuse. After explaining that litter also referred to the accumulation of leaves, sticks, bark and other organic matter, the negative connotation of the word, 'litter', occurred to me - yet another unfortunate dysphemism, that diminishes its intrinsic value as one of the most diverse habitats on the planet. Although the word originates from old French litiere, or from Latin lectus, meaning bed (OED), its use today is most commonly associated with unwanted refuse. In recent years litter has also become known as 'fuel'. One might argue that it's just a matter of semantics, however, I imagine that it's simpler to reconcile removing or burning litter or fuel, than to destroy precious habitat and kill its inhabitants.

I then remembered a similar experience I'd had two decades ago while driving through the Wombat with a conservation department employee, who made reference to the 'units', nodding his head in the direction of the forest. I recall staring into the trees with the same confusion as my friend, before realising, in horror that he was referring not to apartments, but to trees that were destined to be felled. The reduction of a tree – a living ecosystem, to a singular quantifiable economic unit was a jarring introduction to the effective use of doublespeak to disguise and distort meaning or value.

This deliberate use of ambiguous language is commonly associated with governmental and corporate institutions, the church and the military. Politicians are renowned for deliberately adopting doublespeak to justify destruction – think of terms such as collateral damage for the killing of innocent bystanders, ecological destruction and environmental contamination, or environmental security for securing the environment for corporate exploitation.

The list is endless... As George Orwell wrote in his famous essay more than 60 years ago, political language 'is designed to make lies sounds truthful and murder respectable and to give an appearance of solidity to pure wind'.

Litter Biodiversity

The so-called litter we missed on our Wombat walk is in fact an incredible world teeming with a phenomenal diversity of creatures. These are the unseen, largely unknown, often microscopic cryptic creatures who inhabit the realm of darkness; the cracks and crevices, tunnels and caverns, interstitial spaces amongst tree roots, curled up in bark, hidden from view. Faunal diversity in litter is believed to be orders of magnitude greater than the more familiar aboveground biota. Leaf litter even rivals coral reefs in terms of the biodiversity it supports. Due to the cryptic nature and small size of litter inhabitants, predominantly invertebrates, it is thought that less than ten percent have been described.

Although most invertebrates are of unknown identity, the crucial role they perform in forest ecosystem maintenance is well known. Invertebrates are fundamental to processes such as litter decomposition and pollination. Invertebrates have also been used as environmental bio-indicators as they are relatively easy to monitor and respond to stresses in predictable ways (Goodsell et. al 2008). Particular guilds of invertebrates, such as spiders, wasps and flies are reliable bio-indicators of environmental condition (Clausen 1986).

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However, litter communities typically vary enormously over space and time in response to environmental factors such as rainfall and temperature. This naturally occurring variability can therefore make it difficult to assess the impacts of disturbances such as fire or deforestation on litter biota and ecosystem processes (Friend, 1994). The impact of fire, for example, on litter biota in the Wombat has been little studied due to the lack of taxonomic and biological knowledge, and the complexity of both the organisms and ecosystems.

So who are these cryptic creatures?

Litter contains all manner of creatures, many of the more conspicuous belonging to the Phylum Arthropoda such as insects, arachnids, scorpions, centipedes, crustaceans and their kin.

The Wombat is home to an enormous diversity of spiders including the familiar lovely long-legged Hunstmans. The female Huntsman (Huntswoman?) produces a flattish white papery silken egg capsule to contain her eggs, which are commonly found amongst the Wombat's leaf litter. After hatching from the eggs, the mother stays with the spiderlings for several weeks during which time they undergo several moults, before venturing off into their own lives among the litter.

Mites are also arachnids and comprise the largest, most diverse and ubiquitous group within the class Arachnida.

The red velvet mites are like tiny ruby jewels on the Wombat forest floor and even more spectacular when viewed under the microscope. Some mites have been used extensively in agriculture and horticulture as biological control agents but their most important role is in stimulating the decomposition process amongst the leaf litter.

Scorpions are secretive, mostly nocturnal hunters who seek out their prey, such as beetles, spiders and millipedes with the help of sensory organs and vibration sensitive tarsal hairs on their legs. Scorpions are also dedicated mothers, whose live young climb onto her back where they are cared for until they're able to hunt for themselves.

Some of the most intriguing creatures creeping amongst the Wombat's litter are the velvet worms (Onychophora). Velvet worms are ancient Gondwanan creatures that seek out potential prey such as woodlice, spiders and tasty worms, pursuing them into a corner where they immobilise their victims by squirting a sticky glue-like slime.

Also slurping about amongst the Wombat's leaf litter are members of the Gastropoda – slugs and snails and their relatives. Many gastropods are herbivores, scraping algae from various substrata using their radula – a specially adapted minutely toothed, chitinous ribbon. Gastropods are an important part of the food web and often specialise by feeding on or poorly digestible materials as well as being an important food source for other animals.

Gastropod Gastronomy – a snail enjoying breakfast. *(photo by Alison Pouliot)*

But by far the most diverse, abundant and ubiquitous multi-cellular organisms, not just in the Wombat, but on the entire planet, are the Nematodes (roundworms). Nematodes have colonised just about every available habitat and may exist as plant parasites, predators or free-living. The majority of those are less than a millimetre long (although some are up to 10m long) and play an important role in soil ecology.

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And then there are all those members of the other two kingdoms, the unicellular and virtually unknown protists and bacteria.

Birds, reptiles, amphibians and mammals also utilise the leaf litter as habitat, as hunting grounds, as protection and in a myriad of other ways, but they're a whole other topic for another article...

It has been known for several decades that invertebrates are central to ecosystem functioning and comprise the bulk of the world's biological diversity (New 1984). Many taxa are currently being explored for their potential as bio-indicators of environmental condition. Long-term rigorous research into litter community composition and responses to environmental disturbance such as fire is critical to enabling its effective use as a management tool. Only then can management decisions be based on a sound understanding of the ecological implications of fire. Meanwhile we must engage extreme caution and conservatism in using fire as a management tool if leaf litter inhabitants and forest health are to be effectively conserved.

A Huntsman up close *(photo by Alison Pouliot)*

Leaf Litter Book

Recently I was fortunate to meet the inspirational Rachel Tonkin who illustrated the wonderful book 'Leaf Litter'. Rachel's exquisite illustrations provide the most marvellous adventure into this secret wonderland. Leaf Litter is a children's book (and has received several prizes) but I challenge any adult not to be totally intrigued and awe-inspired by her fabulous book.

Clausen, I.H.S. 1986, 'The use of spiders (Araneae) as ecological indicators', Bulletin of the British Arachnology Society, vol. 7, pp. 83-86.

Friend, G. 1994, 'Fire ecology of invertebrates – implications for nature conservation, fire management and future research, Australian Government Biodiversity Series, Paper No. 8

Goodsell, P.J, Underwood, A.J. and Chapman M.G. 2008, Evidence necessary for taxa to be reliable indicators of environmental conditions or impacts, Marine Pollution Bulletin, Volume 58, Issue 3, August 2009, Pages 323-331

Neumann F.G. & Tolhurst, K. 1991, 'Effects of fuel reduction burning on epigeal arthropods and earthworms in dry sclerophyll eucalypt forest of west-central Victoria', Australian Journal of Ecology, vol. 16, pp. 315-330.

New, T.R. 1984, Insect Conservation: An Australian Perspective, Dr W. Junk Publishers, Netherlands.

Tonkin, R, 2006, Leaf Litter, Harper Collins, Australia

Alison Pouliot **www.alisonpouliot.com** ■

Pictures from the Hepburn Wildlife Shelter...

www.hepburnwildlifeshelter.com

by Tibor Hegedis

How's Basalt? He's really good, healthy and playfully active. He weights about 15kg now and is close to 16 months old, having more than doubled his weight since January. He spends most of the time outside with his other adolescent wombat friends or in his den under the house at the Shelter. Gayle is very happy with his progress and said that he will likely be old enough to venture out into the nearby forest this summer. Go Basalt.

Basalt chasing Feldspar... This is fun... Lets play! Just try not to wreck anything...

For help with orphaned or injured animals call the 24 Hour Wildlife Emergency Number on **13 000 WILDLIFE** (that's **13 000 94535**) or Hepburn Wildlife Shelter on **03 5348 3932**

Feathertail Glider (*Acrobates pygmaeus*)

By Gayle Osborne

Australia has a rich collection of fascinating and unique fauna remarkably adapted to our continent. The world's smallest gliding mammal, the Feathertail Glider is found in the Wombat Forest and in most eucalypt forests and woodlands of eastern Australia.

The size of a mouse, this glider has remarkable adaptations; a tail with long stiff hairs shaped like a feather to steer or brake and to anchor when landing.

The tongue is brush-tipped for nectar feeding and the molar teeth shaped for insect eating. Its feet have serrated pads on each toe (similar to geckos) so it can adhere to smooth barked gum species. Many sweat glands provide moisture creating mini suction cups. Their claws are sharp for climbing.

The gliding membrane of a Feathertail Glider is relatively thick and they can glide for 20 meters often resembling a falling leaf. The fur is grey/brown with a light cream to white abdomen.

This little creature relies on a complex habitat for its food requirements and security from predation. Their diet consists of arthropods (includes moths and spiders), pollen, honeydew, nectar and seeds. Pollen is their primary source of protein and honeydew is the carbohydrate-rich secretion from lerp-forming insects.

A nectar feeding Feathertail Glider, *Acrobates pygmaeus* *(photo by Pavel German from the Australian Museum website)*

Front foot of a Feathertail Glider from below *(Photo by Simon Hinkley and Ken Walker from the Museum Victoria website)*

As with so many of our forest dwellers the Feathertail Glider relies on hollows. The entry hole need only be 2cm. They build nests of leaves and shredded bark and often groups of over 20 can be found sharing the same hollow for warmth, their small size causing them to be vulnerable to cold. They will enter torpor when the weather is cold or wet or when foraging could be difficult.

Their lifespan is usually 3 – 4 years; the female can begin breeding in their first year, usually producing a litter of 2 or 3. The growth of the young is slow with a long dependence on the mother, spending about 65 days in the pouch and about 35 days in the nest.

Cats are significant predators particularly close to dwellings and sadly Feathertail Gliders can be found drowned in buckets of water. Do remember if leaving buckets of water around your house for fire fighting or deep bowls of water for birds and animals to leave a sturdy stick for small creatures and birds to use to climb out. Old tanks not properly sealed can be another source of danger.

Ref: Gliders of Australia, David Lindenmayer, ISBN 0-86840-523-X.
www.australianmuseum.net.au/Feathertail-Glider
www.museumvictoria.com.au/bioinformatics/mammals/index.htm ■

Newsletter articles (and suggestions) are always most welcome. For more information please contact **Tibor Hegedis** by emailing to **newsletter@wombatforestcare.org.au**

Art for Nature - Education By Design

By Angela Halpin and Tibor Hegedis

Biodiversity is crashing worldwide and despite the sincere efforts of many, the living biosphere continues to be the loser in funding and effective actions. There is an overwhelming wealth of urgent threat messages and worrying reports about our living planet in the news.

The most recent Ballarat Biodiversity Conference closing discussion panel articulated the need for the 'biodiversity lobby' to get help from media and promotions specialists to educate government bodies and the general public. Biodiversity needs its own advertising agency to create a strategy with a clear message designed to cut through the competing demands of various commercial and industry lobby groups. This can also serve as an educational opportunity to increase peoples understanding of the vital importance of protecting and enhancing biodiversity. We humans need to be reminded sometimes that we are a part of biodiversity, not apart from it.

We can start with something simple like using signs to inform car drivers that they are in a vital habitat area. (Slow down – be quiet– dogs on a lead, etc.).

We couldn't find an existing sign for 'vital habitat' – (a living system, dynamic and fragile, a fluid process over time, biodiversity in action). So we've designed our own universal icon for 'vital habitat'. The use of these signs can extend from dry land ecosystems, to wetlands and into the ocean. 'Vital Habitat' markers are intended to be road and track signs with further information relevant to each individual habitat. The idea will be rolled out to local councils and also offered over the Internet so other global citizens can use it to highlight the need for nature protection.

The Wombat Forest is a bio-diverse living system that deserves a duty of care from managing authorities. It is a refuge for many of Victoria's imperilled native plant and animal populations. The Wombat Forest is also a vital water catchment giving rise to six rivers and when in a healthy state, even feeds into the Murray River system. The majority of these natural systems are now so degraded that they require our caring contribution for their wellbeing, especially as we face the many challenges of Climate Change.

It is our individual responsibility to go beyond merely monitoring extinction or decline and actively keep biodiversity from being lost in the noise of modern life. ■

Annual General Meeting for 2009

Our AGM will be held on Sunday 13th of September from 2pm at the Glenlyon Hall

We aim to keep the official business to a minimum and then settle in to enjoy our guest speaker, **Geoff Park** from North Central CMA. Geoff will talk to us about the **Connecting Country Project** in the Mount Alexander Shire which was funded by the Norman Wettenhall Foundation.

His background is in landscape ecology, teaching and community education and he has a long standing involvement with communities working to improve biodiversity conservation in agricultural landscapes.

So please come along, enjoy the day with us and catch up with old friends and meet some new friends too. Non members are most welcome.

Wombat Forestcare (Inc.) Membership

Wombat Forestcare Inc. is dedicated to preserving the biodiversity and amenity of the Wombat State Forest by utilising the skills and resources of the community. It will monitor activities affecting the forest and will work with government departments and their officers to improve or correct procedures which may impact on it. By becoming a member you will have input into our activities and projects, and give support to caring for our forests. For memberships and further information contact Gayle Osborne, phone: 03 5348 7558 or email: info@wombatforestcare.org.au - Membership Fees are only $10 Single and $15 Family.